

# N-type Ca<sup>++</sup> CP α1B (A-11): sc-271010

## BACKGROUND

N-type calcium channels are localized in high density presynaptic nerve terminals and are crucial elements in neuronal excitation-secretion coupling. Peripherally distributed N-type Ca<sup>2+</sup> channel plays a key role in cardiovascular regulation through autonomic nervous system. The high-voltage activated Ca<sup>2+</sup> channels that have been characterized biochemically are complexes of a pore-forming α-1 subunit; a transmembrane, disulfide-linked complex of α-2 and δ subunits; an intracellular β subunit; and in some cases, a transmembrane γ subunit. The α-1 subunit conducts N-type Ca<sup>2+</sup> currents, which initiate rapid synaptic transmission. In addition to mediating Ca<sup>2+</sup> entry to initiate transmitter release, N-type Ca<sup>2+</sup> channels are thought to interact directly with proteins of the synaptic vesicle docking and fusion machinery. The synaptic protein interaction sites in the intracellular loop II-III of subunit α-1B of N-type Ca<sup>2+</sup> channels bind to Syntaxin, SNAP-25 and Synaptotagmin.

## REFERENCES

1. Catterall, W.A. 1999. Interactions of presynaptic Ca<sup>2+</sup> channels and snare proteins in neurotransmitter release. *Ann. N.Y. Acad. Sci.* 868: 144-159.
2. Uneyama, H., et al. 1999. Pharmacology of N-type Ca<sup>2+</sup> channels distributed in cardiovascular system. *Int. J. Mol. Med.* 5: 455-466.
3. Fossier, P., et al. 1999. Calcium transients and neurotransmitter release at an identified synapse. *Trends Neurosci.* 4: 161-166.

## CHROMOSOMAL LOCATION

Genetic locus: CACNA1B (human) mapping to 9q34.3.

## SOURCE

N-type Ca<sup>++</sup> CP α1B (A-11) is a mouse monoclonal antibody raised against amino acids 1841-1995 mapping near the C-terminus of N-type Ca<sup>++</sup> CP α1B of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>3</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

N-type Ca<sup>++</sup> CP α1B (A-11) is recommended for detection of N-type calcium channel α1B of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for N-type Ca<sup>++</sup> CP α1B siRNA (h): sc-42698, N-type Ca<sup>++</sup> CP α1B shRNA Plasmid (h): sc-42698-SH and N-type Ca<sup>++</sup> CP α1B shRNA (h) Lentiviral Particles: sc-42698-V.

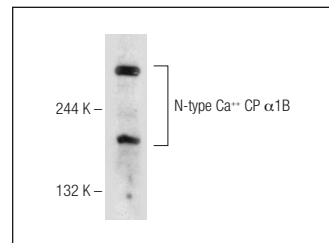
Molecular Weight of N-type Ca<sup>++</sup> CP α1B: 250 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, U-87 MG cell lysate: sc-2411 or IMR-32 cell lysate: sc-2409.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



N-type Ca<sup>++</sup> CP α1B (A-11): sc-271010. Western blot analysis of N-type Ca<sup>++</sup> CP α1B expression in IMR-32 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Ronzitti, G., et al. 2014. Exogenous α-synuclein decreases raft partitioning of Ca<sub>v</sub>2.2 channels inducing dopamine release. *J. Neurosci.* 34: 10603-10615.
2. Pitake, S., et al. 2019. Inflammation induced sensory nerve growth and pain hypersensitivity requires the N-Type calcium channel Ca<sub>v</sub>2.2. *Front. Neurosci.* 13: 1009.
3. Pathe-Neuschäfer-Rube, A., et al. 2021. Cell-based reporter release assay to determine the activity of calcium-dependent neurotoxins and neuroactive pharmaceuticals. *Toxins* 13: 247.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.